Wi-NEXT
EVERYTHING CAN BE PART OF A NETWORK

INSTALLATION AND MAINTENANCE GUIDE - N.A.A.W. CONNECT

NAAW

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1. VERIFICATION SECTION

1.1 Approval

APPROVED BY	POSITION	DATE
Nicola De Carne	Wireless Networking Director - Wi-Next S.r.l.	30th May 2011

1.2 Revision history

REV.	AUTHOR	DESCRIPTION	DATE
0	Wi -Next S.r.l.	First draft	15th Jun 2008
1	Wi-Next S.r.l.	Revision	9th Mar 2010
2	Wi-Next S.r.l.	Revision	1st Feb 2011
3	Wi-Next S.r.l.	Revision	30th May 2011

Further updates and related revisions of the present manual are available on-line at the following address: www.winext.eu/wiki.

1.3 Definitions, acronyms and abbreviations

N.A.A.W. Connect	Wireless device router:	
	frequency:	2,412GHz-2,472GHz / 5,15GHz-5,35GHz / 5.47GHz-5.725 GHz
	standard:	IEEE 802.11 a/b/g/n – IEEE 802.11 d – IEEE 802.11 e – IEEE 802.11 h – IEEE 802.11 i
	power supply:	120/240 V autosensing - 24V 12W output

1. VERIFICATION SECTION

1.4 Versions

N.A.A.W. Connect 2.4

To create a hot spot to realize a link (for domestic or business use) on 2.4 GHz (802.11b/g/n)

Integrated antenna
dual polarization
2.4 GHz – 8 dBi

N.A.A.W. Connect 5

To deploy a network infrastructure or create professional link with the best quality of the signal on 5 GHz (802.11a/n)

Integrated antenna
dual polarization
5 GHz – 17 dBi

N.A.A.W. Connect Long Range

Wireless router working on 5 GHz (802.11a/n)
for link up to 10Km.

28 dBm
(aggregated channels)

Integrated antenna
dual polarization
5 GHz – 16 dBi

2. INTRODUCTION

Thank you for purchasing this N.A.A.W. product. This document contains full documentation relating to the product, including the declaration of conformity. The user's guide gives all the information regarding installation and testing of the N.A.A.W. Connect, and its subsequent periodic maintenance.

2.1 Compliance with R&TTE directives

Wi-Next S.r.l. declares that the N.A.A.W. Connect complies with the essential requirements and relevant provisions of Directive 1999/5/EC.

2.2 Restrictions of use: ministerial regulations

Please note that the use of this device is regulated by:

1. Legislative Decree 08/01/2003 N.259, Articles 104 (activity subject to general authorisation) and 105 (free use for personal use);
2. Ministerial Decree 28/05/2003 and subsequent amendments to the provision of private and public access to networks and telecommunications services.

2.3 Warnings

This manual sets out information to anyone in charge of:

- installation
- maintenance
- network administration or anyone employed in a technical capacity - provided they are informed about the risks and safety standards regarding the installation, operation and maintenance of electric radio communications equipment.

When carrying out the installation you must check the functionality of the N.A.A.W. Connect.
Do not take any corrective action unless you are certain about the result.

Do not dismantle the device. Taking apart the device will invalidate the warranty. In case of doubt, please contact our technical support section (e-mail: assistenza@winext.eu).

2. INTRODUCTION

The manufacturer will not be liable for any damage to property or injuries in case of:

- improper use of the device,
- use of the device by untrained staff,
- improper installation,
- faulty or inadequate materials used for the installation,
- unauthorised modifications,
- use of non genuine spare parts,
- non-compliance with the recommendations contained in this document.

The manual covers only the use of the application provided by the manufacturer and under existing legislation relating to data transmission by radio.

3. DESCRIPTION OF N.A.A.W CONNECT

3.1 Intended purpose of use by the manufacturer

The N.A.A.W. Connect, in all its versions, is a radio device for outdoor wireless data transmission operating on 2.4 GHz or 5.4 GHz frequency.

3.2 Package Content

- outdoor unit (ODU) with integrated antenna and mounting brackets.
- indoor unit (IDU): 24V/12W adapter with POE switch.
- user manual on CD-ROM.

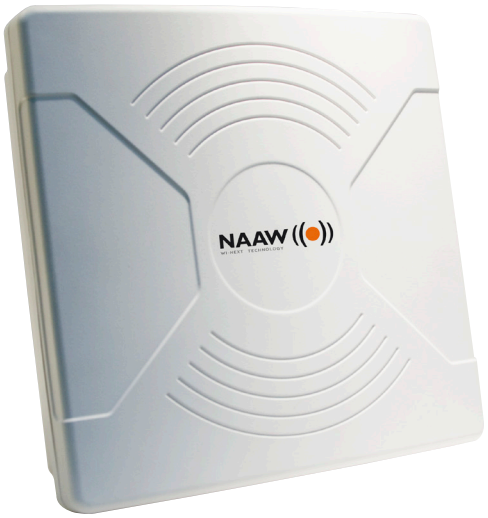
The product N.A.A.W. Connect consists of two units:

- The plastic outdoor unit (ODU) which contains the control card and the transceiver unit which is directly connected to the antenna.
- The indoor unit (IDU) which can be connected to the local ethernet and is connected to the external unit via UTP multicore CAT5 cable.

ODU is powered with 24V/12W, ensuring the safety of those who carry out the installation.

3.3 Outdoor Unit (ODU) - Indoor Unit (IDU)

N.A.A.W. Connect 2.4 - 5



N.A.A.W. Connect Long Range

Fig. 1 ODU

Fig. 2 Detail: Power adapter with POE

3. DESCRIPTION OF N.A.A.W CONNECT

3.4 Technical specification of N.A.A.W. Connect

Features

Operating Modes
NAAW Mesh
Access points
Client
Repeater
Wireless Adapter
Wireless
Wireless Routing Client
Gateway
WAN Type
Static IP
Dynamic IP
PPPoE
Device Management
Web Server
Telnet or Secure Shell (SSH)

Virtual Access Point (VAP)
Up to 4 SSIDs with unique MAC Addresses (BSSID)
802.1q VLAN tag per VAP with Bridging
Configurable Security (WEP, TKIP, AES, MAC Filtering) per VAP
Multiples SSID - SSH CONFIGURATION
Supports up to 4 virtual access points (VAP) per radio, with unique BSSIDs. Traffic from each VAP can be tagged to a unique VLAN and /or bridged if required. Each VAP will be able to configure their own security (WEP, TKIP, and AES).
Advanced Features
DHCP server
DNS forwarder
Other Prominent Features
Power with Passive PoE
IEEE 802.11h (DFS & TPC) DFS (On/Off) Ability
Ntenna Alignment Graph

Technical specification of N.A.A.W. Connect 2.4 - 5

Dimension
223 mm x 123 mm x 60 mm (Connect 2.4)
278,5 mm x 123 mm x 60 mm (Connect 5)
Weight: 420gr.
Hardware Features
Linux OS
CPU Atheros AR7130/300MHz
16 Mb SDRAM - 4 Mb FLASH RAM
1 Ethernet Port 10/100 Base-TX (with Auto MDI/MDIX)
PoE IEEE 802.3af Standard PoE Compatible (High Power)
1 Sma Connector for external antenna

Integrated Antennas
Directional antenna double polarization
8 dBi@802.11b/g/n 60° (Connect 2.4)
17 dBi@802.11a/n 30° (Connect 5)
Environment
Operating temperature : from -20°C to +55°C
Humidity : from 5% to 95%

Technical specification of N.A.A.W. Connect Long Range

Dimension
257mm x 257mm x 86mm
Weight : 1000gr.
Hardware Features
Linux OS
CPU Atheros AR7130/300MHz
16 Mb SDRAM - 4 Mb FLASH RAM
1 Ethernet Port 10/100 Base-TX (with Auto MDI/MDIX)
PoE IEEE 802.3af Standard PoE Compatible (High Power)

Integrated Antennas
Directional antenna dual polarization
16 dBi@802.11a/n
Environment
Operating temperature : from -20°C to +55°C
Humidity : from 5% to 95%

4. SETTING UP OF THE DEVICE

4.1 Installation and inter-connection

N.A.A.W. Connect is equipped with safety features for the protection against direct and indirect contact. **However, the installation must be carried out by appropriately qualified personnel who must observe the following precautions**:

- check the package and promptly notify the supplier in case of damage;
- make sure access points, antennas and support structures are properly installed to avoid health hazards;
- make sure that installation of the access point, antennas and cables is made in accordance with local regulations regarding safety;
- even if earthing is not mandatory by local regulation, it is strongly recommended that all outdoor units have an appropriate earth connection and that they are adequately protected from possible lightning or electrical discharges;
- mount the ODU using the support and the metal clamps provided;
- connect the IDU to the ODU with ethernet cable type CAT5 UTP;
  Maximum recommended length for CAT5 UTP cable is 90m.

4.2 Preparing and switching on the device

To set up the device:
- insert the bracket using the screws supplied
- remove the plastic cover at the base of the device (versions Connect 2.4 and Connect 5)
- connect the power supply to the mains and insert the 220/230V plug into the socket of the POE switch supplied
- connect a UTP CAT5 cable-exit from the “OUT” socket of the POE power switch to the Ethernet RJ-45 port of the device
- close the plastic cover

The device starts up and after about 60 seconds it reaches a fully functional status.

4. SETTING UP OF THE DEVICE

4.3 Antenna Pointing

Installation of the ODU and orientation of the antenna must be carried out by qualified personnel according to the safety regulations pertaining to external environments (rooftops or telecommunications towers).

Wi-Next will not be held responsible for damage to persons or property resulting from faulty installation of outdoor units and antennas.

We recommend the following:

- place the antenna as high as possible to get a more efficient connection
- check there is open space between the antennas with which the connection is made
- ensure that growth of vegetation will not hinder the radio signal between the two points
- optimise direction pointing using the signal graph illustrated in the next section

5. CONFIGURATION

5.1 N.A.A.W. control panel

The N.A.A.W. control panel is a Web application that resides on the device and is easily accessible by pointing the browser to one of the IP addresses of the device, either wirelessly or by cable.
If you want to configure your PC manually, you must know the address of the N.A.A.W. interface to which you are connected (the default is 192.168.1.1/24 on Ethernet ports and wireless network in AP mode). If you do not know the address, you can follow the discovery procedure outlined in 5.13.1 “Troubleshooting - The device can’t be reached at the assigned IP adress”.

5.2 First access

To accede to the configuration menu of the device you need to connect it to a pc, to open the Internet browser and to insert the default address **192.168.1.1**.

Access data
USERNAME : root
PASSWORD : winext

On the Manual CD included in the package you can find a ".bin" file containing the firmware of the device to be use to restore it, if needed, following the procedure reported in chapter 5.7.

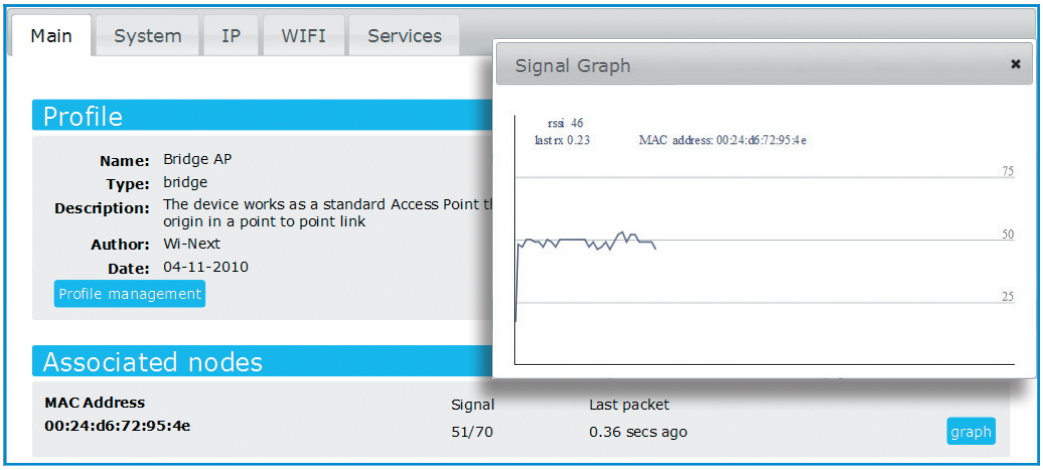
5.3 Main menu

You can accede the different configuration pages through 6 TABS:
- Main
- System
- IP
- Wi-Fi
- Services
- Firewall

The TABS are automatically enabled/disabled according to the profile in use.

5.4 Main

The page shows two sections:
- Profile – Info regarding the active profile.
- Associated nodes – List of wireless nodes connected with the device; this section is automatically updated in real time (it is empty if there isn't an associated node). The button GRAPH can be used to show the graph of the Wi-Fi signal (it can also be used to optimize the pointing of the antennas).



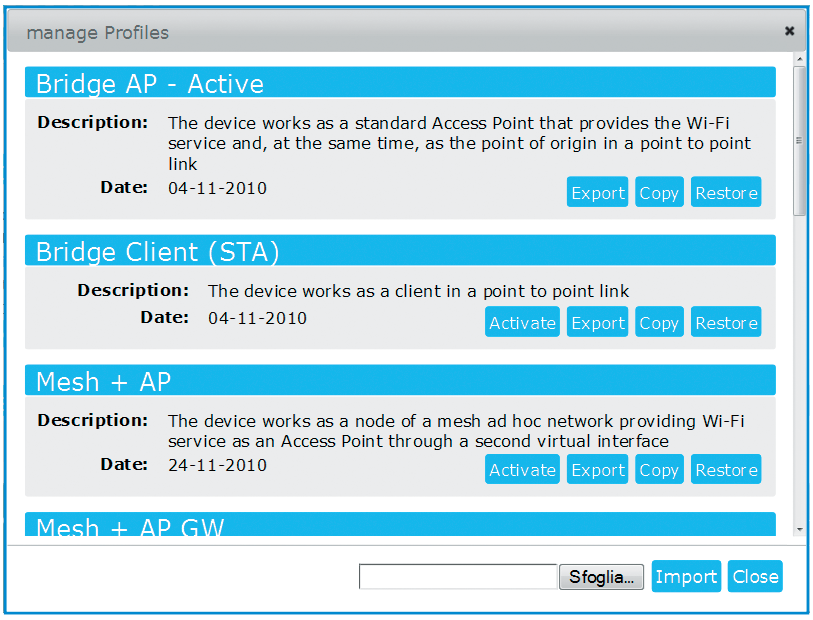
5.5 Main – profile management

By selecting the button “Profile management” you open a pop-up.
The profile that is in use is highlighted with the indication “Active”.
For each profile you can find a short description and 4 buttons:

- Activate – for the activation of the selected profile.
- Export – it exports the parameters of the profile to save them locally (for backup, to use pre-set custom profiles during configuration activities, etc.).
- Copy – to create a copy of the selected profile with a new name.
- Restore – it restores all the parameters of the profile to the original setup.

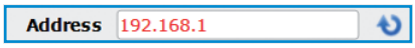
At the bottom of the pop-up there is a box that you can use to upload profiles stored locally; if you import a profile with the same name of an existing one the system will overwrite it (asking a confirmation to the user).

In chapter 5.12 you can find all profiles included in the N.A.A.W. Connect device and the typical scenario for whom they have been created.


manage Profiles
Bridge AP - Active
Description: The device works as a standard Access Point that provides the Wi-Fi service and, at the same time, as the point of origin in a point to point link
Date: 04-11-2010
Export
Copy
Restore
Bridge Client (STA)
Description: The device works as a client in a point to point link
Date: 04-11-2010
Activate
Export
Copy
Restore
Mesh + AP
Description: The device works as a node of a mesh ad hoc network providing Wi-Fi service as an Access Point through a second virtual interface
Date: 24-11-2010
Activate
Export
Copy
Restore
Mesh + AP GW
Sfoglia...
Import
Close

5.6 Change of parameters

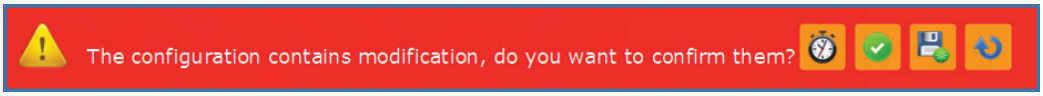
When you change parameters the system automatically checks the value inserted in each field.
Until the value is not properly formatted it is not possible to save the change e the field is showed in red. Pressing the “undo” button you can cancel the change made on the value of the field (or the option).



When you change one or more parameters in the top of the page you can find the menu for the management of changes with an alert and 4 options:

- Try – It makes a test of the changes.
- Apply and save – To save the changes made to the configuration and to apply them immediately.
- Save – It saves the changes made without applying them until next reboot.
- Restore – All changes that have been made to the page and not yet saved are canceled.

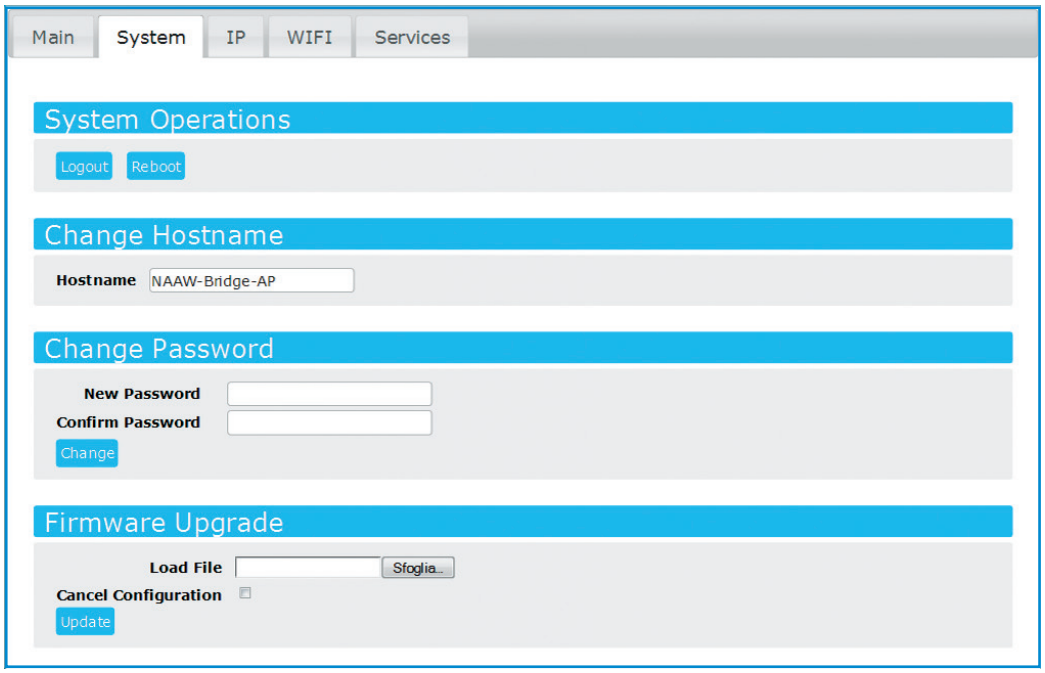
When you make more changes to a profile it is better to save them (without applying them) and to reboot the device from section “System”.



5.7 System

The page shows 4 sections:

- System operations – from this section you can logout or reboot the device (operation that is requie after making different changes to the configuration of the device).
- Change hostname – it allows you to define a new name for the device.
- Change password – it is used to change the password used to accede to the device.
- Firmware upgrade – this section is used to upgrade the firmware of the device; through the box you can upload a new firmware version (it is a file in .bin format); the option “Cancel configuration” is used to overwrite the customization made to the profiles (restoring the device to a default configuration); if you don’t select this option the device maintain the emended profiles.



5. CONFIGURATION

5.8 IP

In this page you can find up to 4 different sections for the configuration of IP addresses (the number and the typology of sections that are showed is related to the active profile):

1) Point of access
This network is used as an access point from the client connecting to the device.
The available options are the following:

- Assignment section
  - Mode used to assign the IP address: static or dynamic (with assignment made by the DHCP server to whom the device is connected) - profiles Bridge AP, Bridge Client and Repeater.
- Address section
  - IP address – profiles Bridge AP, Bridge Client, Repeater, Mesh and Router.
  - Network (subnet mask) – profiles Bridge AP, Bridge Client, Repeater, Mesh and Router.
  - Gateway – IP address of the gateway to which the device is connected – Profiles Bridge AP, Bridge Client and Repeater.
  - DNS – IP address of the DNS server used from the device – profiles Bridge AP, Bridge Client and Repeater.
  - STP – option to activate the Spanning Tree Protocol – profiles Bridge AP, Bridge Client and Repeater.
  - Export – option used to export the network (respectively from the ethernet port to the mesh for the profile “Mesh” and from the wireless network to the Ethernet port for the profile “Router”) – profiles Mesh and Router.

2) Mesh
This network is used by N.A.A.W. devices to connect among them and creating a mesh network.
The assignment can be made in two ways:

- N.A.A.W. – the address is automatically assigned inside a 10.0.0.0/8 network.
- Static - the address is manually assigned from the user inserting IP address and subnet mask.

The mesh network is used from all the mesh profiles (Mesh, Mesh GW, Mesh+AP and Mesh+AP GW).

3) WAN
his network is used from the device that is directly connected to the gateway (so that the device operates as a gateway for the other N.A.A.W. devices and for the clients that are connected – directly or through other N.A.A.W. devices).
The available options are the following:

- Assignment section
  - Mode used to assign the IP address: static or dynamic (with assignment made by the DHCP server to whom the device is connected) – Profiles Mesh GW, Mesh+AP GW, Router and Router WLAN.
- Address section
  - IP address – profiles Mesh GW, Mesh+AP GW, Router and Router WLAN.
  - Network (subnet mask) – profiles Mesh GW, Mesh+AP GW, Router and Router WLAN.
  - Gateway – IP address of the gateway to which the device is connected – profiles Mesh GW, Mesh+AP GW, Router and Router WLAN.
  - DNS – IP address of the DNS server used from the device – profiles Mesh GW, Mesh+AP GW, Router and Router WLAN.
- Masquerade section (NAT)
  - Masquerade (NAT) – option used to enable the masquerade (NAT) of the traffic coming from the network and passing through the device – profiles Mesh GW, Mesh+AP GW, Router and Router WLAN.

4) Bridge (Access Point + Ethernet)
This network is used to put the Ethernet port and the wireless interface in a bridge

- Address section
  - IP address – profiles Mesh+AP, Mesh+AP GW and Router WLAN.
  - Network (subnet mask) – profiles Mesh+AP, Mesh+AP GW and Router WLAN.
  - STP – option to activate the Spanning Tree Protocol – profiles Mesh+AP, Mesh+AP GW and Router WLAN.
  - Export – option used to export the network (respectively from the network in Access Point mode and from the Ethernet port to the mesh network for the profile “Mesh+AP” and from the wireless network to the Ethernet port for the profile “Mesh+AP GW”) – profiles Mesh+AP, Mesh+AP GW and Router WLAN.

5. CONFIGURATION

- List of the profiles and the IP configuration available for each::
  - Bridge AP : Point of Access
  - Bridge Cient : Point of Access
  - Repeater : Point of Access
  - Mesh : Point of Access + Mesh
  - Mesh GW : WAN + Mesh
  - Mesh + AP : Bridge + Mesh
  - Mesh + AP GW : WAN + Bridge + Mesh
  - Router : WAN + Point of Access
  - Router WLAN : WAN + Bridge

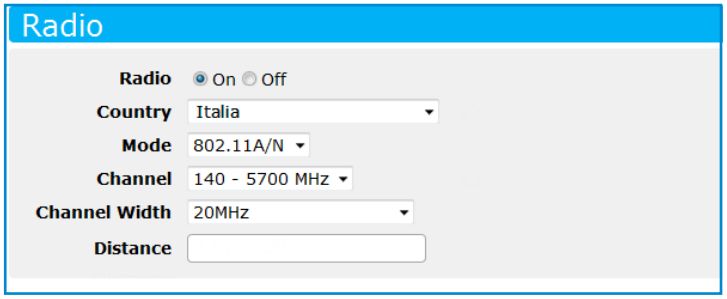
5.9 Wi-Fi

The page includes two different parts of setup:

1) Radio

This section is related to the “physical” setup of the radio and is the same for all the profiles.
The configurable options are the following:

- Radio activation – this parameter turn on or off the radio of the device.
- Country – menu with the choice of the country where the device has to be used for the activation of the proper radio channels.
- Mode – menu used to choose the radio wireless mode among those available on the device.
- Channel – menu used to choose the transmission channel among those that are available.
- Channel width – selection of channel width to be used in 802.11 N mode
  - o 20 MHz – single channel
  - o 40 MHz (lower channel) – aggregation with the lower channel with the selected one
  - o 40 MHz (upper channel) – aggregation with the upper channel with the selected one
- Outdoor use – option used to activate the outdoor use according to the radio channel transmission power that can be used (in many countries this option doesn’t produce any effect because the rules are the same for indoor or outdoor use).
- Distance – distance (in m) from the farther radio connection made by the device; this parameter is used to optimize radio transmission and it is better to round it up.



2) Virtual Interfaces of the radio
This section is related to the setup of the virtual interfaces which alolow to use the radio for the different services; the interfaces that can be used are 3 (the number and typology of the section showed in the page are related to the active profile):

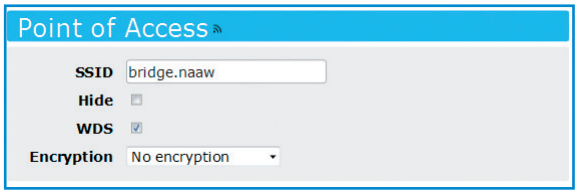
- Point of access
- Station
- Mesh

For each interface you can find, near its name, a small icon which allows to do the site survey, that is tha real time analysis of the radio frequencies to detect the presence of other wireless networks with the main info regarding them.

- Point of access

This interface supply the “traditional” service of wireless access.
The options that can be configured are the following:

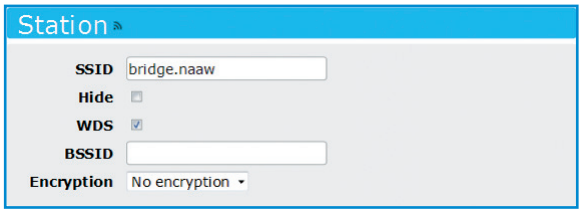
- SSID – name of the wireless network.
- Hide – option used to make the network invisible.
- WDS – option used to activate the WDS service (it has to be enabled when you use configuration where the wireless signal is repeated).
- Encryption – menu where you can select the kind of encryption of the signal; when you activate one kind of encryption the page shows a box where you have to insert the security key.



- Station

This interface allows the device to connect as a client to a Wi-Fi network and it is used when the profile “Repeater” is activated. The options that can be configured are the same used for the “Point of Access” with an additional field:

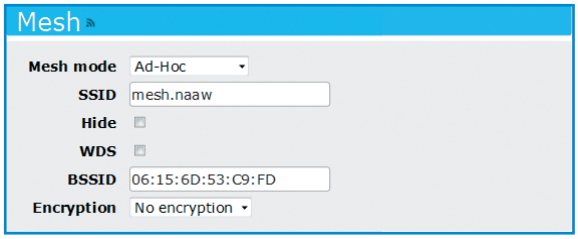
- BSSID – this is the Mac Address of the Access Point on which you want to lock the connection of the client interface. It is used when you have many Access Points with the same SSID and you want to lock the client to a specific AP.



- Mesh

This interface creates the N.A.A.W. mesh network among the devices.
The options that can be configured are the following:

- Mesh mode – it allows you to choose between Ad-hoc mode (classic setup) and Ad-hoc demo (the same as the previous one but without any check packet exchanged among the network).
- SSID – name of the wireless network.
- Hide – option used to make the network invisible.
- WDS – option used to activate the WDS service (it has to be enabled when you use configuration where the wireless signal is repeated).
- identifier used by the devices to connect with each other; if you set-up the same BSSID and the same radio channel the device can be connected even if they have different SSID (this feature can be used for example to give different SSID names to the devices installed in differente sites) – the BSSID should have the format of a mac address (six pairs of hexadecimal values separated with the symbol ":").
- Encryption – menu where you can select the kind of encryption of the signal; when you activate one kind of encryption the page shows a box where you have to insert the security key.



- List of the profiles and the virtual interfaces to be configured for each:
  - Bridge AP, Bridge Client : Point of Access
  - Repeater : Station + Point of Access
  - Mesh : Mesh
  - Mesh GW : Mesh
  - Mesh + AP : Mesh + Point of Access
  - Mesh + AP GW : Mesh + Point of Access
  - Router : Point of Access
  - Router WLan: Station

5.10 Services

This page can show up to 3 different configuration sections (first two are used by all the profiles while the third is used only by part of them):

1) HTTP
Setup of the door through which the device can be reached via HTTP connection.

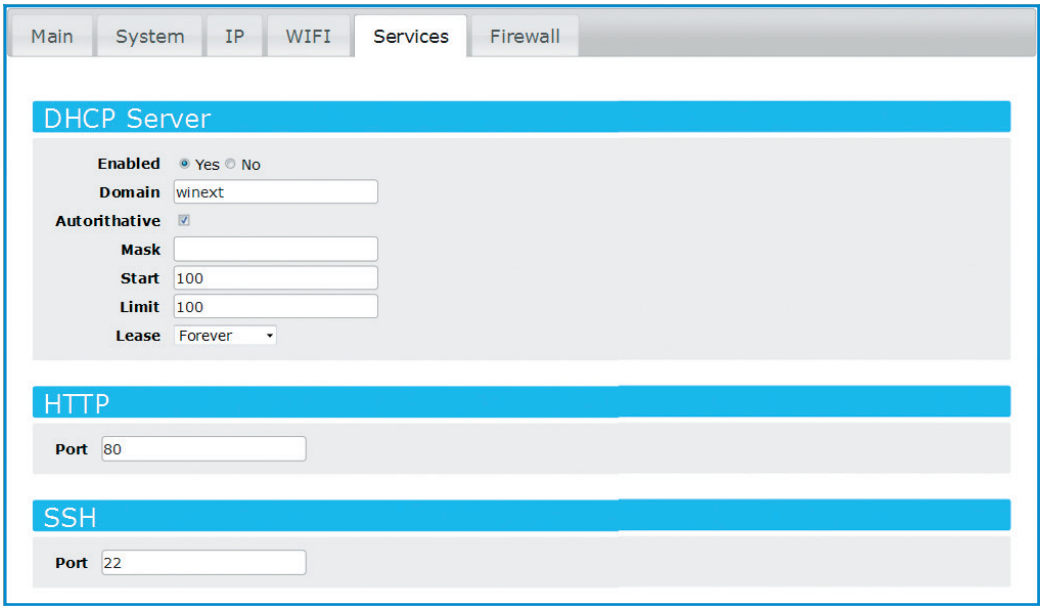
2) SSH
Setup of the door through which the device can be reached via SSH connection.

3) DHCP SERVER (profiles Mesh*, Mesh GW**, Mesh+AP, Mesh+AP GW, Router).
Configuration of the DHCP server.
The options that can be configured are the following:

- Enabling – this allows you to enable/disable DHCP service.
- Domain – this is the domain name inside which the DHCP server works.
- Authoritative – option to enable authoritative.
- Mask – netmask to be assigned to the clients.
- Start – Initial IP to be assigned from DHCP.
- Limit – maximum number of IP address that can be assigned by the DHCP.
- Lease – release time of the IP address due to inactivity of the client (it can be set at 15/30/60 minutes or without limit).

*for this profile it operates only through the Ethernet port.

**for this profile it is active only as a DNS server.



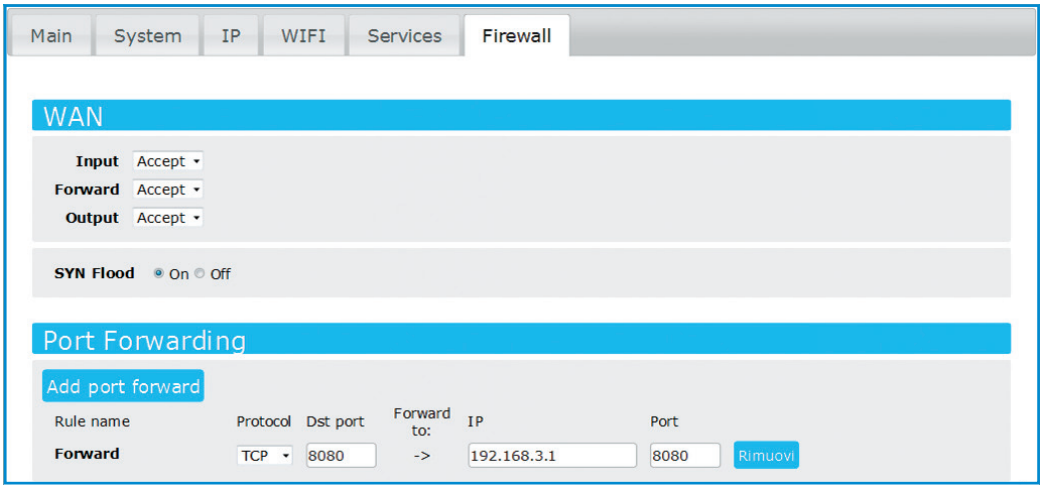
5.11 Firewall and Port Forwarding

This page includes the setup for the firewall and for the definition of port forwarding. The page is not included in Access Point and Repeater profiles..

1) Firewall
This section allows you to define firewall rules for packet in Input, Output or Forward and to enable SYN Flood.

2) Port forwarding
Through this section you can define the rules for the port forwarding inserting:

- Name of the rule.
- Protocol to be used.
- Destination port.
- Destination IP.
- Forward port.



5.12 Default Profiles

1) Bridge AP
The device works as a standard Access Point that provides the Wi-Fi service and, at the same time, as the point of origin in a point to point link.

2) Bridge Client
The device works as a client in a point to point link.

3) Repeater
The device works as a wireless repeater that, being connected with a main Access Point, extends its Wi-Fi coverage.

4) Mesh
The device works as a node of a mesh network (single Radio Interface in ad hoc mode).

5) Mesh GW
The device works as a gateway to Internet in a mesh ad hoc network (for a network of devices using “Mesh” Profile).

6) Mesh + AP
The device works as a node of a mesh ad hoc network providing Wi-Fi service as an Access Point through a second virtual interface.

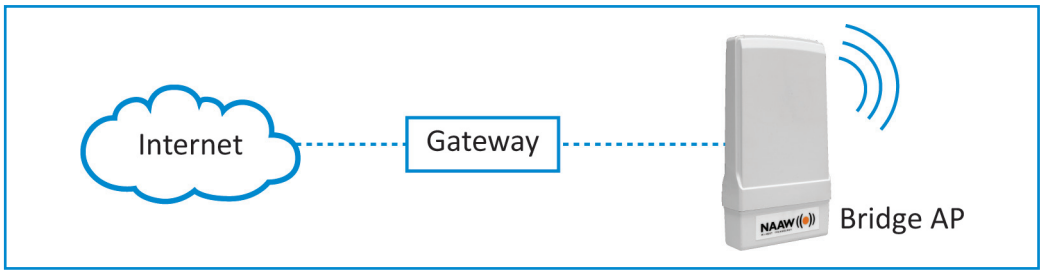
7) Mesh + AP GW
The device works as a gateway to Internet in a mesh ad hoc network + AP (for a network of devices using ‘Mesh + AP’ Profile).

8) Router
The device works as an Access Point operating also as a gateway to the Internet providing basic services (i.e.: DHCP, DNS, NAT).

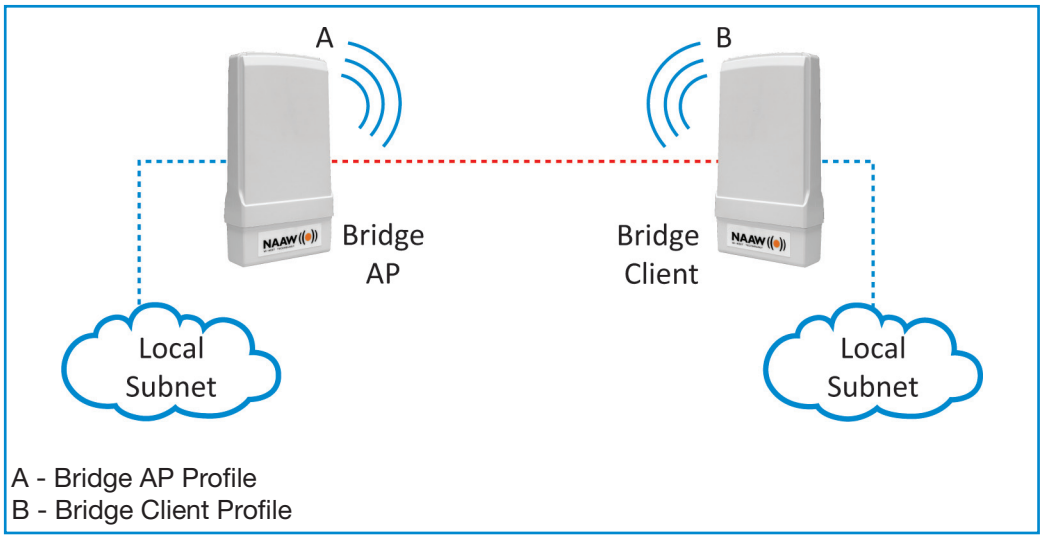
9) Router WLan
The device works as a CPE able to receive the Wi-Fi signal, even from a huge wireless network, and distribute it locally through the Ethernet port.

5. CONFIGURATION

Bridge AP Profile
You can use the profile Access Point to provide wireless service on a local area.



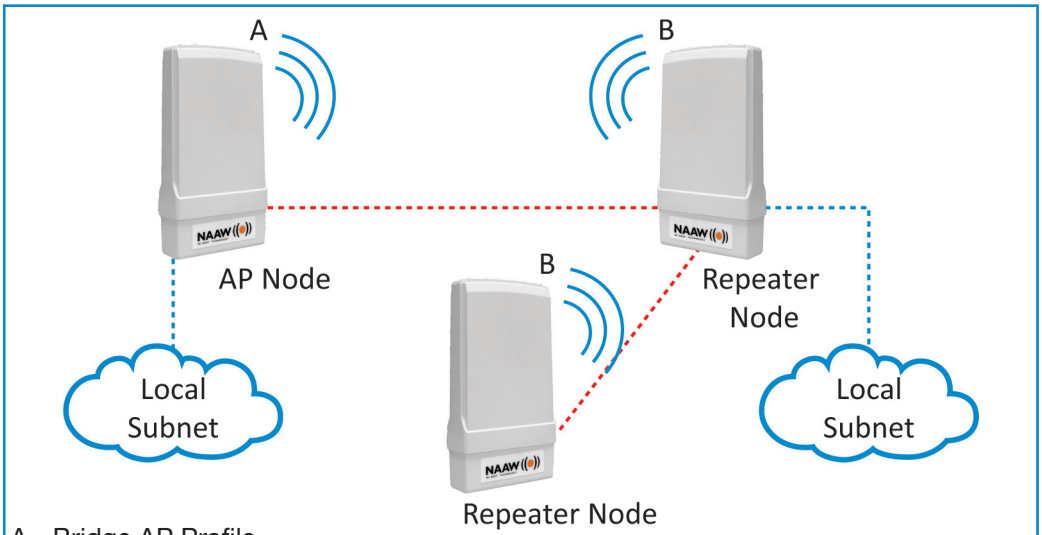
Point-to-point link
Creation of a link between two different sites using Bridge AP profile on the first node and Bridge Client profile on the other.



A - Bridge AP Profile
B - Bridge Client Profile

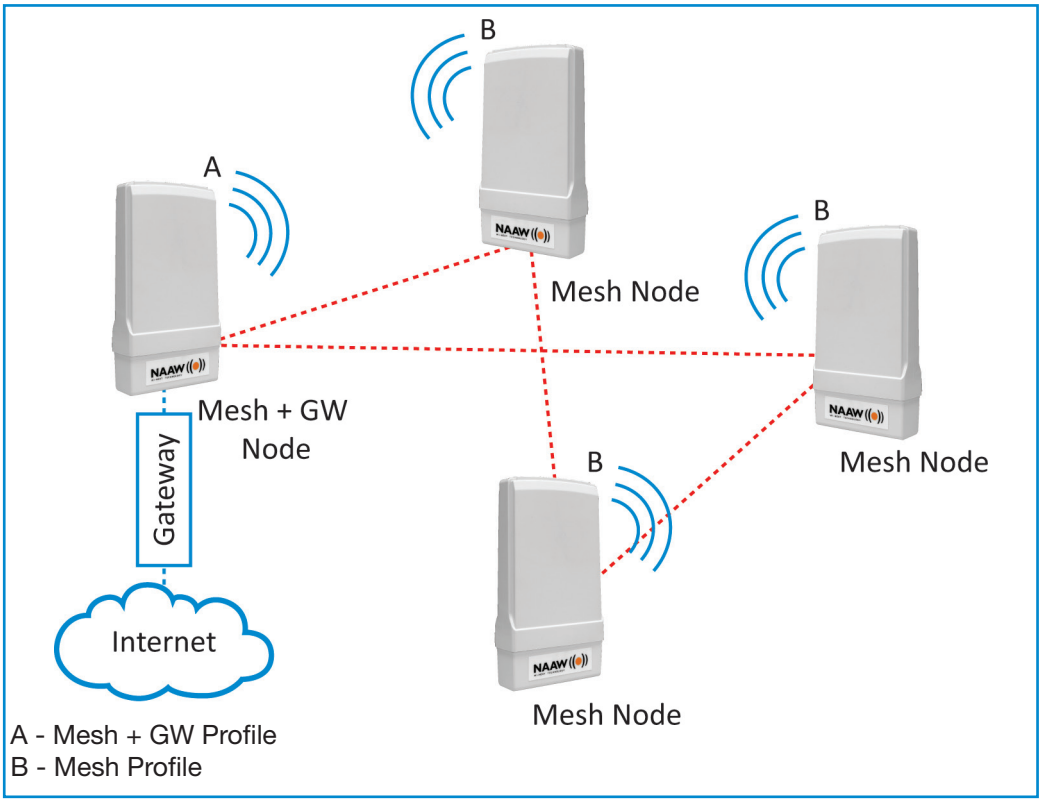
5. CONFIGURATION

Repeater Profile
You can use this kind of network when you need to create a point-to-point connection with one devices operating as a repeater to extend wireless coverage.



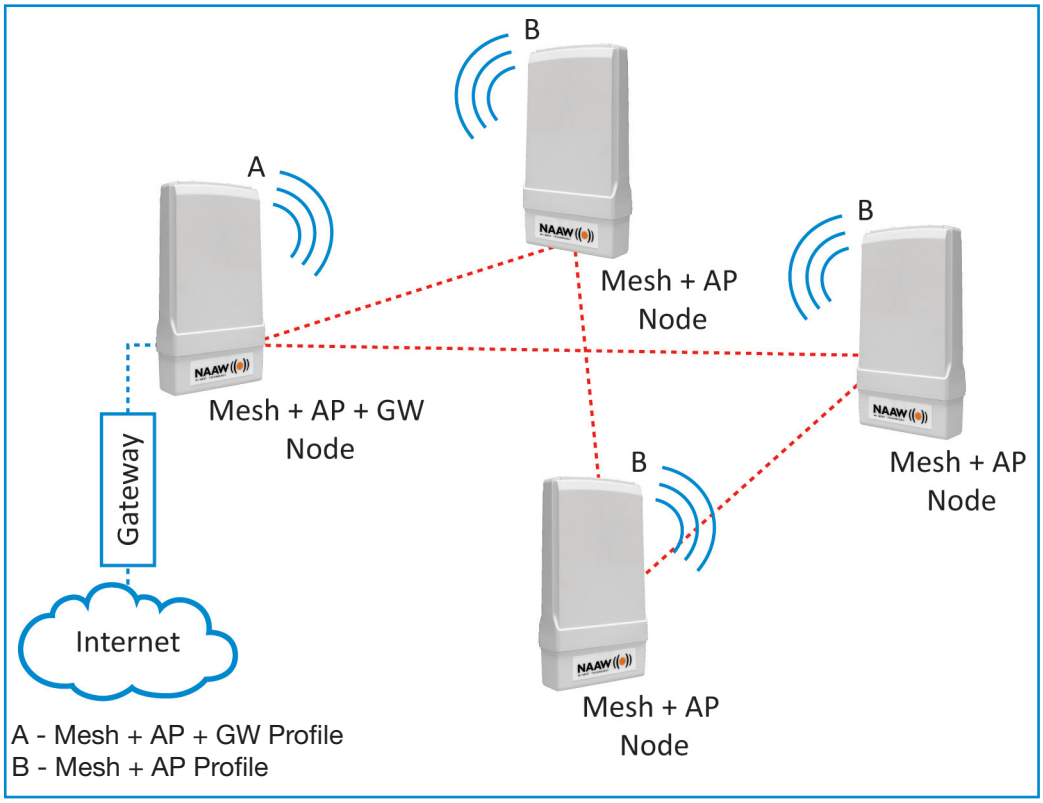
A - Bridge AP Profile
B - Repeater Profile

Ad-Hoc Mesh Network
The ad-hoc mesh network allows you to create a level 3 infrastructure with automatic management of routing among the nodes.

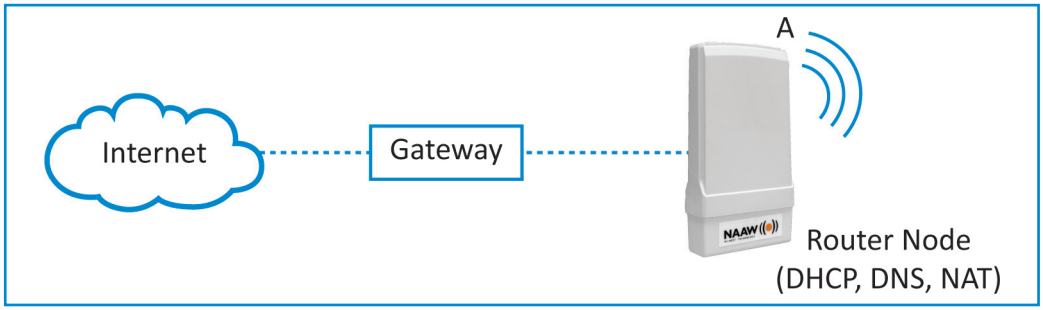


A - Mesh + GW Profile
B - Mesh Profile

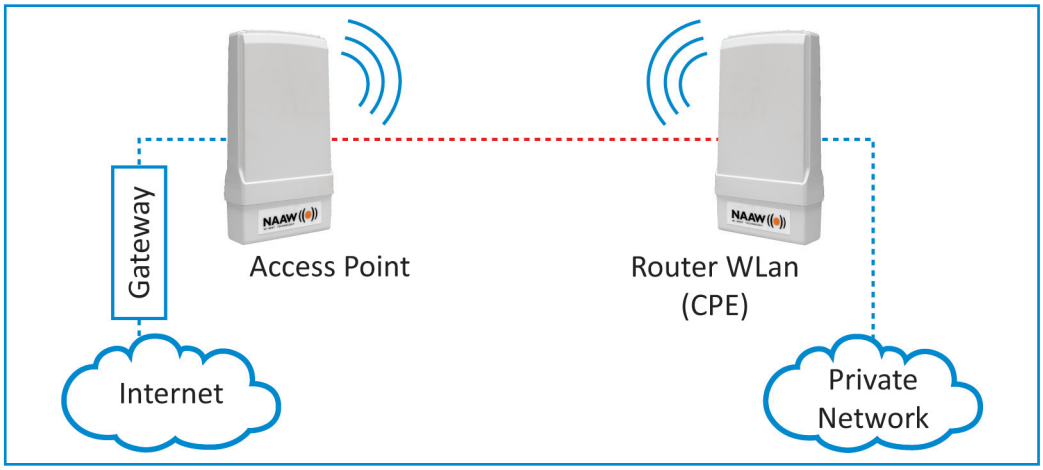
Ad-Hoc Mesh Network + Access Point
The ad-hoc mesh network allows you to create a level 3 infrastructure with automatic management of routing among the nodes. All nodes also provide Wi-Fi service in Access Point mode.



Access Point with routing service
In this configuration besides operating a san access point the device acts as a router. You should use Router profile.



WLan Router for the connection to wireless networks
With this profile the device is able to connect to an external wireless network doing a NAT on your own local private network.
You should use the profile Router WLAN.



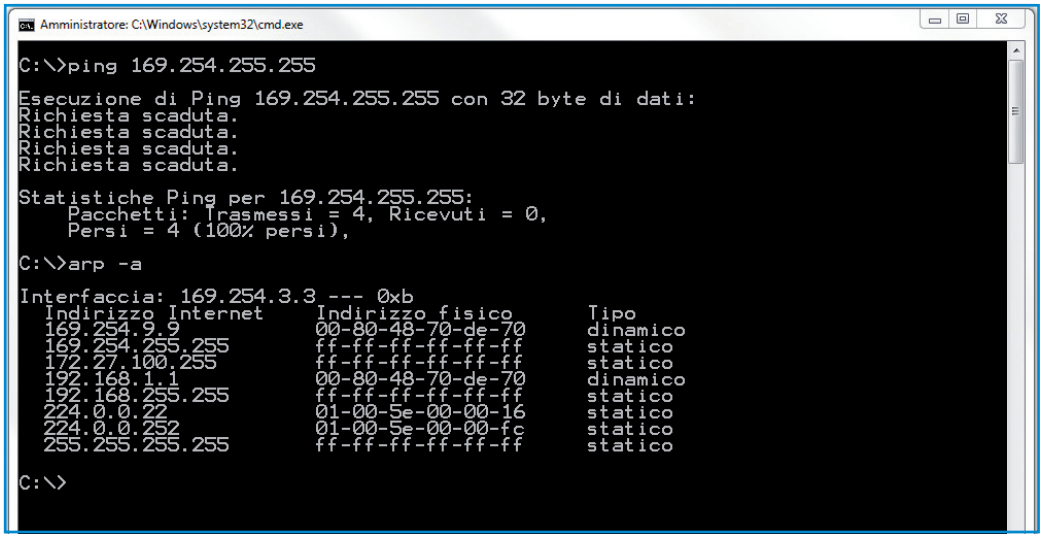
5.13 Troubleshooting

5.13.1 The device can't be reached at the assigned IP address

During the configuration of N.A.A.W. devices it is possible, for whatever reason, that you are unable to identify the IP address of the interface through which you are connected to the device.
This may occur because the interface is configured with N.A.A.W. protocol (which calculates the IP address starting from a MAC address), or because there is a duplication of the IP address or simply because of an oversight on the part of the administrator.
If this is the case, because every interface is configured with a link-local type IP address (169.254.0.0/16), N.A.A.W. provides a very simple solution

The procedure is as follows:

- configure the interface on the PC connected to NAAW with an address of the link-local type (e.g. 169.254.3.3/16))
- Open a terminal command
- ping address: 169,254,255,255:
  - o on Linux OS "ping-b 169 254 255 255". All N.A.A.W. devices physically connected to the interface, will answer. At this point it is sufficient to identify, by repeated attempts if necessary, the unit in question by contacting it via the exposed link-local address.
  - o on Windows OS command "ping 169254255255" does not show responses by individual N.A.A.W. and to view addresses that have responded, use the command "arp-a".



6. MATERIAL DISPOSAL

6.1 Toxic substances (RoHS Compatibility)

The components used in the manufacturing of the N.A.A.W. device comply with the current regulations on protection of the environment. The assembly of components made by the manufacturer does not introduce risk factors for the operator or the environment. The device is not made with materials requiring sensitive handling such as asbestos, PCB-PCT, phosphorus, cadmium, or halogens (fluorine, chlorine, bromine, iodine).

7. DECLARATION OF CONFORMITY CE

The N.A.A.W. Connect range of products complies with the legislation requirements of the following countries, for which a request for release on their markets was granted:

AT	DE	GB	IT	NO
BE	DK	GR	LT	RO
CH	EE	HU	LU	SE
CY	FI	IE	LV	SI
CZ	FR	IS	NL	SK

7.1 Restrictions of use for specific countries

This product can be used in all EU countries (and any other country in which the EU directive 1999/95/EC applies) with no restrictions, except for the countries listed below:

BELGIUM: you must send notification to the Institute for Postal Services and Telecommunications (BIPT) for each wireless device which covers more than 300 meters. For more information please visit: http://www.bipt.be.

FRANCE: you must partially reduce the power output as per the table below when using devices for outdoor use. For more information please visit: http://www.arcep.fr.

Table 1: Power applicable in France

ASSIGNED	FREQUENCY (MHz)	POWER EIRP
Indoor (no restrictions)	2400 - 2483.5	100 mW (20dBm)
Outdoor	2400 - 2454 2454 - 2483.5	100 mW (20dBm) 10 mW (10dBm)

ITALY: This product complies with the specifications of National and Radio Interface and meets the requirements of the National Frequency Allocation Plan. However, if not installed for private use, the use of 2.4 GHz Wireless LAN products requires a “General Permission “. For more information see http http://www.comunicazioni.it.

7. DECLARATION OF CONFORMITY CE

7.2 Restrictions of use of the device

This product has been designed to be used with integrated antenna and / or with dedicated external antenna, if included in the package.
If external antennas, connected through a special cable guide, are used please note that legislation stipulates the radiated power must not exceed 100 mW EIRP.

7.3 Power Output

In accordance with local regulations of the country where you install the NAAW, you need to adjust the transmission power according to the approved limits.

7.4 N.A.A.W. Connect 2.4

DICHIARAZIONE DI CONFORMITA' CE

DICHIARIAMO SOTTO NOSTRA ESCLUSIVA RESPONSABILITA' CHE L'APPARATO PER TELECOMUNICAZIONI QUI SOTTO DESCRITTO:

PRODUTTORE:	**Wi-Next srl**
INDIRIZZO:	Via Ferrero 10 – 10098 Cascine Vica Rivoli TO - Italia Tel: 011/95.90.140 Fax: 011/95.90.200
PRODOTTO:	**N.A.A.W. DT 524**
FAMIGLIA:	**CONNECT**
MODELLO:	**2,4**
MARCA:	Wi-Next
FUNZIONE:	Apparato outdoor di ricetrasmissione dati IP nelle bande RLAN e HIPERLAN, 2,4 – 5,4 GHz, con ricetrasmettitore e processore di controllo

E' CONFORME
ALLA DIRETTIVA 1999/5/CE
ED ALLE SEGUENTI NORME ARMONIZZATE:

Direttive Radio:
EN 301893 V1.5.1 (Art. 3 paragrafo 2- Funzionale Radio) **EN 300328 V1.7.1**
Compatibilità Elettromagnetica:
EN 301489–1 V1.8.1 e EN 301489-17 V2.1.1 (Art. 3 paragrafo 1, lettera b) - EMC)
Sicurezza elettrica:
EN 60950-1: 2001 (Art. 3 paragrafo 1, lettera a) - Sicurezza Elettrica)

Luogo:	Rivoli
Data:	Marzo 2010
Firma del responsabile:	Nicola De Carne

Wi-Next – Via Ferrero 10 – 10098 Cascine Vica Rivoli TO
tel. Uff. 011 95.90.140 – fax 011 95.90.200
www.winext.eu - info@winext.eu

7.5 N.A.A.W. Connect 5

DICHIARAZIONE DI CONFORMITA' CE

DICHIARIAMO SOTTO NOSTRA ESCLUSIVA RESPONSABILITA' CHE L'APPARATO PER TELECOMUNICAZIONI QUI SOTTO DESCRITTO:

PRODUTTORE:	**Wi-Next srl**
INDIRIZZO:	Via Ferrero 10 – 10098 Cascine Vica Rivoli TO - Italia Tel: 011/95.90.140 Fax: 011/95.90.200
PRODOTTO:	**N.A.A.W. DT 524**
FAMIGLIA:	**CONNECT**
MODELLO:	**5**
MARCA:	Wi-Next
FUNZIONE:	Apparato outdoor di ricetrasmissione dati IP nelle bande RLAN e HIPERLAN, 2,4 – 5,4 GHz, con ricetrasmettitore e processore di controllo

E' CONFORME
ALLA DIRETTIVA 1999/5/CE
ED ALLE SEGUENTI NORME ARMONIZZATE:

Direttive Radio:
EN 301893 V1.5.1 (Art. 3 paragrafo 2- Funzionale Radio) **EN 300328 V1.7.1**
Compatibilità Elettromagnetica:
EN 301489–1 V1.8.1 e EN 301489-17 V2.1.1 (Art. 3 paragrafo 1, lettera b) - EMC)
Sicurezza elettrica:
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Luogo:	Rivoli
Data:	Marzo 2010
Firma del responsabile:	Nicola De Carne

Wi-Next – Via Ferrero 10 – 10098 Cascine Vica Rivoli TO
tel. Uff. 011 95.90.140 – fax 011 95.90.200
www.winext.eu - info@winext.eu

7.6 N.A.A.W. Connect Long Range

DICHIARAZIONE DI CONFORMITA' CE

DICHIARIAMO SOTTO NOSTRA ESCLUSIVA RESPONSABILITA' CHE L'APPARATO PER TELECOMUNICAZIONI QUI SOTTO DESCRITTO:

PRODUTTORE:	**Wi-Next srl**
INDIRIZZO:	Via Ferrero 10 – 10098 Cascine Vica Rivoli TO - Italia Tel: 011/95.90.140 Fax: 011/95.90.200
PRODOTTO:	**N.A.A.W. DT 524**
FAMIGLIA:	**CONNECT**
MODELLO:	**Long Range**
MARCA:	Wi-Next
FUNZIONE:	Apparato outdoor di ricetrasmissione dati IP nelle bande RLAN e HIPERLAN, 2,4 – 5,4 GHz, con ricetrasmettitore e processore di controllo

E' CONFORME
ALLA DIRETTIVA 1999/5/CE
ED ALLE SEGUENTI NORME ARMONIZZATE:

Direttive Radio:
EN 301893 V1.5.1 (Art. 3 paragrafo 2- Funzionale Radio) **EN 300328 V1.7.1**
Compatibilità Elettromagnetica:
EN 301489–1 V1.8.1 e EN 301489-17 V2.1.1 (Art. 3 paragrafo 1, lettera b) - EMC)
Sicurezza elettrica:
EN 60950-1: 2001 (Art. 3 paragrafo 1, lettera a) - Sicurezza Elettrica)

Luogo:	Rivoli
Data:	Marzo 2010
Firma del responsabile:	Nicola De Carne

Wi-Next – Via Ferrero 10 – 10098 Cascine Vica Rivoli TO
tel. Uff. 011 95.90.140 – fax 011 95.90.200
www.winext.eu - info@winext.eu